

CLAIMS

What is claimed is:

1. A power supply circuit for supplying alternating power to a load, comprising:

a source of direct current (DC) voltage;

a half-bridge inverter for receiving the DC input voltage and for generating an alternating current (AC) output signal;

a first harmonic filter at the output of the inverter, the first harmonic filter filtering out predetermined harmonic components of the AC signal to generate a filtered AC signal; and

an output circuit at the output of the first harmonic filter for receiving the filtered AC signal and feeding the filtered AC signal to a load, wherein the output circuit includes first and second rectifiers connected relative to a point in the output circuit such that if the inverter attempts to drive the point to a voltage which exceeds one of a predetermined first and second voltage, a respective one of the first and second rectifiers conducts to cause at least one of voltage and current to return to the source of DC voltage.

2. The apparatus of claim 1 wherein the first harmonic filter includes an inductor and a capacitor in series, and the first harmonic filter is placed in parallel with one of the switches of the half-bridge.

3. The apparatus of claim 1 wherein the first harmonic filter includes an inductor and a capacitor, and the inductor is placed between an output of the switches of the half-bridge and an interconnection between the first and second rectifiers, and the capacitor further comprises a combined capacitance of a pair of capacitors each in parallel with the respective first and second rectifier.

4. The apparatus of claim 1 wherein the first and second rectifiers each further comprise a pair of diodes in series, and the first harmonic filter includes an inductor and a capacitor, and the inductor is placed between an output of the switches and an interconnection between the first and second diodes, and the capacitor further comprises a combined capacitance of a plurality of capacitors, where each capacitor corresponds to one of each respective pair of diodes, each in parallel with a corresponding, respective diode.

5. The apparatus of claim 1 further comprising:
a pair of capacitors placed in series between the respective voltage rails of the DC voltage source;
the inverter comprising a pair of switches placed in series between the respective voltage rails of the DC voltage source; and
an inductor placed between an interconnection of the capacitors and an interconnection of the switches.